What is claimed is:

1. A liquid crystal display device comprising:

an upper substrate on which are arranged an upper electrode for applying a voltage, and an upper alignment control layer formed on the upper electrode and performed an aligning treatment;

a lower substrate on which are arranged a lower electrode for applying a voltage in cooperation with the upper electrode, and a lower alignment control layer formed on the lower electrode and performed an aligning treatment in the same direction as the upper alignment control layer; and

monostable ferroelectric liquid crystals sealed between the upper alignment control layer and the lower alignment control layer, and forming a chevron-layer structure which is so bent that the inside from both sides of the upper and lower alignment control layers is protruded in the direction of the aligning treatment.

2. A liquid crystal display device according to claim 1, wherein the alignment control layers are organic polymer films without side chain alkyl structure.

3. A method of producing a liquid crystal display device comprising:

sticking an upper substrate on which is arranged an upper alignment control layer that is formed on an upper electrode and is performed an aligning treatment, together with a lower substrate on which is arranged a lower alignment control layer

that is formed on a lower electrode and is performed an aligning treatment in the same direction as the upper alignment control layer;

sealing monostable ferroelectric liquid crystals between the upper alignment control layer and the lower alignment control layer; and

transiting the phase of the monostable ferroelectric liquid crystals from the isotropic phase or the (chiral) nematic phase into the chiral smectic phase while applying a DC voltage across the upper electrode and the lower electrode to uniformalize the helical axes of the liquid crystal molecules and, at the same time, transiting the direction in which the chevron-layer structure is bent into a direction opposite to the direction in which the chevron-layer structure is bent when the DC voltage is not applied.

4. A method of producing a liquid crystal display device according to claim 3, wherein the DC voltage is larger than a voltage at an inflection point on a curve of voltage vs. transmission factor characteristics but is smaller than a saturation voltage in the normally black display.

5. A method of producing a liquid crystal display device according to claim 3, wherein the pre-tilt angle is not smaller than 0° but is not larger than 3° in a state where the monostable ferroelectric liquid crystals are exhibiting a nematic phase.

6. A method of producing a liquid crystal display device according to claim 4, wherein the pre-tilt angle is not smaller

than 0° but is not larger than 3° in a state where the monostable ferroelectric liquid crystals are exhibiting a nematic phase.

7. A method of producing a liquid crystal display device according to claim 3, wherein an organic polymer film without side chain alkyl structure is used as the alignment control layers.

8. A method of producing a liquid crystal display device according to claim 4, wherein an organic polymer film without side chain alkyl structure is used as the alignment control layers.

9. A method of producing a liquid crystal display device according to claim 5, wherein an organic polymer film without side chain alkyl structure is used as the alignment control layers.

10. A method of producing a liquid crystal display device according to claim 6, wherein an organic polymer film without side chain alkyl structure is used as the alignment control layers.